



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,954	01/24/2000	Pierre C. Fazan	303.434US2	6507

21186 7590 05/16/2003

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402

EXAMINER

KANG, DONGHEE

ART UNIT PAPER NUMBER

2811

DATE MAILED: 05/16/2003

25

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/489,954

Applicant(s)

FAZAN ET AL.

Examiner

Donghee Kang

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 39-41, 44-56, 88, 89 and 93-116 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 56, 88, 89 and 112-116 is/are allowed.
- 6) ☒ Claim(s) 39-41, 47-53, 55, 93, 94, 98-107 and 109-111 is/are rejected.
- 7) ☒ Claim(s) 44-46, 54, 94-97 and 108 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11 March 2003 has been entered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims **39-41, 47-53, 55, 93-94, 98-107 and 109-111** are rejected under 35 U.S.C. 102(e) as being anticipated by Takenaka (US 5,293,510).

Regarding claims **39, 48 & 51**, Takenaka teaches a dynamic random access memory device comprising (Fig.1):

a capacitor including an electrode which comprise:

a first portion (32) formed in an insulative layer (27 & 28) having an upper surface; a second portion (31) overlying the first portion (32), wherein said insulative

layer surrounds a sidewall of said second portion and said second portion does not extend above the upper surface; and a third portion (30) overlying said second portion (31) and, extending above and below said upper surface of said insulative layer, and including a recess, wherein said first portion and said second portion are different materials. *See also Col.4, line 42-Col.5, line 30.*

Regarding claims **40, 49 & 52**, Takenaka teaches the second portion and the third portion are different.

Regarding claim **41**, Takenaka teaches the first portion and the third portion are different.

Regarding claim **47**, Takenaka teaches the insulative layer surrounding a lower sidewall of said third portion.

Regarding claims **50 & 53**, Takenaka teaches the first portion and the second portion are different materials.

Regarding claim **55**, Takenaka teaches the dynamic random access device further comprising a transistor.

Regarding claims **93, 100 & 105**, Takenaka teaches a dynamic random access memory device comprising (Fig.1):

a capacitor including an electrode which comprises:

a first portion (32) formed in an insulative layer (27 & 28) having an upper surface; a second portion (31) overlying the first portion (32) and having a sidewall substantially flush with the upper surface; and a third portion (30) overlying said second portion (31) and, extending above and below said upper surface of said insulative layer,

Art Unit: 2811

and including a recess, wherein the first portion and the second portion are different materials.

Regarding claims **94, 101 & 106**, Takenaka teaches the second portion and the third portion are different.

Regarding claim **98**, Takenaka teaches the insulative layer surrounding a sidewall of the third portion.

Regarding claims **99, 104 & 111**, Takenaka teaches the insulative layer surrounding the sidewall of the second portion.

Regarding claims **102 & 107**, Takenaka teaches the first portion and the third portion are different materials.

Regarding claims **103 & 110**, Takenaka teaches the first portion contacts the second portion, and the second portion contacts the third portion.

Regarding claim **109**, Takenaka teaches the dynamic random access device further comprising a transistor.

***Allowable Subject Matter***

4. Claims **44-46, 54, 95-97 & 108** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims **56, 88-89 & 112-116** are allowed.

The following is a statement of reasons for the indication of allowable subject matter and reasons for the allowance:

Although Takenaka teaches the electrode comprising a first, second and third portion, Takenaka fails to teach or suggest that the first portion is a silicon contact, the second portion is a diffusion barrier layer, and the third portion is an oxidation resistant layer.

### ***Response to Arguments***

6. Applicant's arguments filed 11 March 2003 have been fully considered but they are not persuasive.

Applicant argues that Takenaka fails to teach the claimed term an electrode comprising first, second and third portion because in Takenaka features 30-32 represent portions of two different electrodes. This is not convincing. In this application, the claimed term "an electrode" also comprises different electrodes made of different materials. Therefore, an electrode of Takenaka would meet the claimed term "an electrode".

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 703-305-9147. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Application/Control Number: 09/489,954

Page 6

Art Unit: 2811

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

dhk  
May 12, 2003

RECEIVED  
MAY 12 2003  
*Steven Loh*